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RECORD OF DECISION

Amendment 010
Hertzler Impoundment and Mine Waste Management Plan
Stillwater Mining Company
Environmental Impact Statement

Stillwater County

Montana Department of Environmental Quality
and the
Custer National Forest, USDA Forest Service
November 12, 1998

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I. INTRODUCTION

This Record of Decision (ROD) documents our decisions for the Montana Department of Environmental Quality (DEQ) and the Custer National Forest (CNF) to approve the Mine Waste Management Plan, Amendment 010, to Stillwater Mining Company's (SMC) Operating Permit 00118. This amendment eliminates the current production limit and permits an additional tailings impoundment (at the Hertzler ranch site) and pipeline, and additional waste rock storage, water management facilities, and infrastructure to support the continued operation of its existing platinum-palladium mine for approximately 30 years. The plan of operations will cover a permit area located wholly or partially within Sections 1, 2, 10, 11, 15 16, 21, and 23 of T5S, R15E, Sections 29, 30, and 31 in T4S, R16E, and Section 36 of T4S, R15E in Stillwater County, Montana. Federal lands contained in this amendment are administered by the Forest Service, Beartooth Ranger District, of the Custer National Forest.

The amendment will result in development of (1) an additional 730-acre permit area for the Hertzler ranch impoundment and its water management facilities in Sections 29-32 in T4S, R16E, (2) a 182-acre permit area for development of the Stratton ranch water management facilities in Sections 15 and 16 in T5S, R15E, and (3) a tailings pipeline corridor from the existing mine area to the Hertzler ranch impoundment area along the county road corridor (Note: An error in the FEIS incorrectly listed the permit area expansion needed for the permit amendment at 1,112 acres; the additional permit area actually required is 913 acres.) The total permit area will be 2,253 acres.

The existing permit area of 1,340 acres encompasses both National Forest System (NFS) and private lands, of which SMC owns 439 acres and 775 acres are National Forest System lands administered by the Forest Service. Additionally, the Mouat Estate owns 126 acres which are controlled by SMC. Most of the underground mining operation is on National Forest System

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lands while the majority of the surface facilities are located on the patented and private lands. The 913-acre permit area expansion is completely controlled by SMC except for acreage along the pipeline corridor, some of which is on NFS lands and some of which lies along the county road right-of-way.

Platinum and palladium are mined from the Stillwater Complex, the only known economic source of these minerals in North America. Among other uses, the minerals are critical components for catalytic converters and computers. This complex extends from near Dean, Montana, to the Froze-to-Death Creek area of the Main Boulder River, a distance of about 27 miles. Mining of this complex has previously been permitted at the existing minesite near Nye, along the Stillwater River. Additional mining has been permitted in the East Boulder River valley approximately 11 miles south of McLeod, Montana (USFS & DEQ 1992), at the western end of the deposit under Operating Permit 00149.

SMC submitted an amended plan of operations because their tailing impoundment facility will reach its engineered capacity by the year 2003. The purpose of and need for the proposed permit amendment, as discussed in Section 1.1 (page 1-1) of the final environmental impact statement (EIS), is to authorize a flexible and integrated waste management plan in order to provide for the long-term management and disposal of tailing, waste rock, and waste generated by the Stillwater mine.

The Montana Department of Environmental Quality and the Custer National Forest prepared this EIS pursuant to the National and Montana Environmental Policy Acts (NEPA and MEPA), believing the proposal might significantly affect the quality of the environment. The final EIS describes the proposed action, a no action alternative, and two other action alternatives. It describes the environment to be affected and discloses the potential environmental consequences of implementing any of the alternatives. The environmental analysis also identified mitigation and monitoring plans.

The final EIS tiers to and incorporates by reference a number of earlier environmental analyses and decisions. These documents and decisions include: the 1985 Stillwater Mine Development EIS, the 1989 East-Side Adit Development PER/EA, the 1992 EIS for Mine Expansion to 2000 Tons Per Day (TPD) and the 1996 EIS for the Under-the-River Crossing.

The final EIS is available at the Beartooth Ranger District in Red Lodge, Montana, the Custer Forest Supervisor office in Billings, Montana, and the Department of Environmental Quality's office in Helena, Montana. This EIS was developed under the implementing regulations of the National and Montana Environmental Policy Acts (40 CFR 1500 *et seq* and ARM 17. 4.601-636), the National Forest Management Act (36 CFR 219), the 1897 Organic Administration Act (30 Stat. 11), the 1872 General Mining Act (17 Stat. 91) as amended and the 1970 Mining and Minerals Policy Act (P. L. 91-631), the Montana Metal Mine Reclamation Act (82-4-301, MCA, et seq.), the Montana Water Quality Act (75-5-101, MCA, et seq.) and other applicable state and federal statutes.

Most of the land affected by this amendment is private land regulated under authorities granted to the Montana Department of Environmental Quality. These areas include the Hertzler impoundment site, the majority of the pipeline corridor and much of the east-side waste rock storage facility. There is a limited amount of land within the Custer National Forest directly involved in the selected alternative. National Forest System lands affected include a narrow strip immediately north of the existing mine site (T5S, R15E, Section 15) which will be crossed by the pipeline corridor and some lands underlying a portion of the east-side waste rock facility. Forest Service authorities and decisions only apply to NFS lands and do not extend to private lands within or adjacent to the National Forest. The Montana Department of Environmental Quality's authority applies to state, federal, and private lands inclusively.

II. DECISION AND RATIONALE FOR THE DECISION

The Director of the DEQ and the Custer Forest Supervisor must make a decision on SMC's request to amend its permit. The proposal or an agency alternative, if approved, must comply with all applicable Federal and State air and water quality laws and regulations. However, the authorities of the two agencies are different, as noted here and on pages 1-5 and 1-6 of the final EIS. The DEQ may deny the proposed amendment if it fails to meet the requirements of the Montana Metal Mine Reclamation (MMRA), Air Quality or Water Quality acts and their regulations. In addition, since 1986 the DEQ and the Montana First Judicial District Court have interpreted MEPA as supplementing the basis on which an operating permit under MMRA can be conditioned or denied. This means the DEQ may also deny or modify a mine's plan of operations or amendment in order to avoid or mitigate an impact that would significantly degrade the human environment. The operator then has the option of revising the plan.

The Forest Service is not granted authority to deny a Plan of Operations or an amendment to a Plan of Operations (36 CFR 228, Subpart A). If a proposed Plan of Operations or amendment to a Plan of Operations (amendment) is found to conflict with regulation, policy, or Federal law, the Forest Service must notify the operator or claimant that a revision of the proposed Plan of Operations or amendment is required. The operator or claimant then has the option either to modify the Plan of Operations or amendment and resubmit it for approval or withdraw it.

A. Selected Alternative - Alternative B with Conditions/Mitigation Measures

Our agencies evaluated SMC's proposal and determined potential environmental consequences. We have selected Alternative B, the proposed action, for implementation. Incorporated as a part of this decision are the conditions/mitigation measures described in Section V of this record and in the final EIS in Section 2.4.5. This alternative would result in the construction and operation of a second tailings impoundment at the Hertzler ranch site, construction of a 7.8-mile long pipeline corridor along Stillwater County roads 419 and 420 between the existing mill and the new impoundment, construction of a waste rock storage facility on the

east side of the river across from the mill, additional water management sites at the Stratton and Hertzler ranch sites, and elimination of production limits.

We have decided to approve SMC's proposed plan of operations and to incorporate additional permit conditions/mitigation measures to further reduce or eliminate environmental effects. All other plans and commitments contained in the existing permit as amended (see Appendix C of the final EIS), remain in effect, except as specifically modified by the conditions described below in Section V. Our decision takes into consideration other applicable laws described in Section VI and the issues described in Section III, of this record, as well as the analysis contained in the final EIS and previous environmental analyses already cited.

We selected this alternative because it meets the purpose and need of permitting a flexible and integrated waste management plan in order to provide for the long-term management and disposal of tailings and waste rock generated by the Stillwater mine, while minimizing the effects to the environment and to the community affected by this decision. In addition, it addresses SMC's mineral development proposal in accordance with private property rights, public land law, and agency land use plans. All practical means to avoid or minimize adverse environmental impacts have been included in the proposed plan or in the mitigation measures included in our decision.

The reclamation plans, contained in the proposed amendment, are included as a part of our decision in order to enhance the potential for long-term reclamation success, ensure compliance with air and water standards and reduce the potential for impacts to air and water resources for both the short and long-term. These mitigation measures are used to ensure compliance with the forest plan, minimize environmental effects and provide for comparable postmining stability and utility of mined lands with adjacent areas. We believe that, ultimately, our selection of the Hertzler location has the potential to reduce long-term cumulative effects resulting from SMC's operations.

Our selected alternative will affect, to some degree, resources such as water quality, aesthetics, soils, vegetation, and wildlife habitat. Some of these impacts are unavoidable as disclosed in the final EIS. However, although impacts to these resources are unavoidable, they are localized, and minor in nature, not resulting in a violation of any standards and not affecting the long-term potential for successful reclamation. Through project design and mitigation measures, the effects to these potentially significant issue areas have been minimized as described in Chapter IV and Section 4.11, respectively, of the final EIS.

B. Alternatives Not Selected

Alternative A

We did not select Alternative A, the no action alternative, because it fails to meet the purpose of and need for the proposal to provide a flexible and integrated waste management plan in

order to provide for the long-term management and disposal of tailings and waste rock generated by the Stillwater mine. Further, the proposed action and incorporated conditions/mitigation measures provide an acceptable degree of protection to environmental resources in the area, complying with State and Federal laws, policies, and regulations.

Alternative C

We did not select Alternative C due to greater adverse environmental effects as compared to the selected alternative. Under Alternative C, the existing impoundment would have been modified to increase tailing storage capacity. This would have increased the risk to surface water quality of the adjacent Stillwater River as compared to Alternative B. This is because the Modified Centerline Impoundment proposed under this alternative is less than 1/4 mile flow distance from the Stillwater River, whereas, the flow distance from the Hertzler ranch impoundment is approximately 1/2 mile (EIS Sections 4.1.1.3.1 and 4.1.1.2.3).

Earthquake motion at the minesite was identified as a concern (final EIS Section 3.6.1.1). As discussed in EIS Section 4.6.1.2, the potential for adverse tailing impoundment effects due to earthquake motion at the modified impoundment site would be greater than at the Hertzler site due to the characteristics of the soil overlaying bedrock. The risk to adjacent water resources as previously discussed would also be greater.

Although reclamation would be successful at either site, productivity would be restored more quickly at the Hertzler location as opposed to the Alternative C impoundment location due to generally less extreme climate differences such as decreased wind velocities at the Hertzler site.

We believe the selected alternative minimized these risks and did not increase impacts to other resources.

Alternative D

We also did not select Alternative D for many of the same reasons previously noted for Alternatives A and C. Under this alternative, two impoundments would have been constructed and operated approximately 1/4 mile from the Stillwater River. The second impoundment would have been located approximately 200 feet from the Stillwater River (final EIS Section 4.11.3.4). In the event of a tailing release from either the modified existing impoundment or the newly constructed east-side impoundment, the potential for released tailing entering the Stillwater River is greater than the potential under the selected alternative, which has a tailing flow distance of approximately 1/2 mile (EIS Table 2-4). Additionally, under Alternative D, a pipeline for moving tailings slurry would have been suspended from the existing Stillwater River bridge. In the event of a pipeline failure, direct discharge of tailing slurry into the river would have been possible.

This alternative would have potentially greater environmental consequences related to tailing impoundment stability. The tailing impoundments would have been closer to the known fault zone at the mouth of the Stillwater Canyon. Also, the ground motion from an earthquake in the project area may also be greater within the Stillwater Canyon as compared to the Hertzler location due to soil characteristics at the canyon mouth (EIS Section 4.6.1.2 and 4.6.1.3.1).

Again, productivity would be restored more quickly at the Hertzler location due to decreased wind velocities at the Hertzler site and differences in climate between the Hertzler and Stillwater impoundment locations.

Alternative D also did not fully meet the purpose of and need for this project. We considered the fact that SMC's ore body could support mining beyond the approximately 23 years of tailings capacity provided under this alternative. In the event that SMC is in operation 23 years in the future, an additional impoundment location probably would need to be identified and analyzed.

Because of the increased risk and the failure of this alternative to meet purpose and need, we selected the proposed action with mitigations over this alternative.

III. PUBLIC PARTICIPATION, ISSUES AND ALTERNATIVES

Our agencies utilized issues identified by the public to define both the alternatives and the scope of the environmental analysis presented in the EIS. This process is described below.

A. Initial Project Scoping

The agencies mailed and publicized the availability of a scoping document to potentially interested or affected persons on August 27, 1996. During the scoping process we received 52 letters and about 20 phone calls. Additionally, six people visited the Beartooth Ranger District's office in Red Lodge. A public scoping meeting was held in Absarokee on September 24, 1996. Subsequently two field trips were held for the public on November 14 and 15, 1996, and were attended by 50 individuals.

B. Issues Identified

Nine key issues were identified, which focused the analysis, thus ensuring that issues of local concern were addressed. Water quality, impoundment stability and reclamation were determined to be driving issues because of the potential for significant impacts as a result of changes in water quality, impoundment stability or reclamation plans that might result from implementation. As stated in the EIS, the purpose of driving issues is to provide a clear choice among the alternatives for the decision makers. The driving issues helped define the alternatives analyzed while the remaining key issues were used to determine the scope of

environmental effects analysis. This, in turn, resulted in the identification of additional conditions/mitigations to reduce potentially significant impacts.

The following is a summary of the issues which are described in detail in the EIS pages 2-53 through 2-57. The alternative formulation process and component descriptions are further discussed in Section IV of this record.

* Water Quality and Quantity: Concerns were expressed that existing water quality and quantity could change as a result of increases in the development of the sub-surface ore body (including sediment load, chemical constituency, and function of area waters), or as a result of (1) increased Land Application Disposal (LAD) of waste water nitrates, (2) pipeline construction and operation crossing the West Fork of the Stillwater River, and (3) construction and operation of the new tailings impoundment about 7.8 miles northeast of the current mine.

*Wildlife: Potential effects to wildlife that may be present are a concern. Species of concern include mule deer and, to a lesser degree, white-tailed deer and mountain lions that occupy the project area, and to any threatened, endangered, sensitive, or management indicator species, particularly bighorn sheep, that may be present.

*Fisheries: Introduction of sediment and chemicals and subsequent effects on fisheries were a concern because the Stillwater River provides high-quality habitat for trout in both the Stillwater and Yellowstone rivers.

*Air Quality: Potential increases in dust, including very small particulate, in the project area as a result of increased ground disturbance and traffic were a concern. Also of concern was the possibility that odors might be produced and that impacts might occur to the nearest Class I airshed.

*Social/Economics: Many of the residents in the area adjacent to the SMC's existing and proposed facilities have been drawn there because of the quality of life afforded to individuals in the mountainous setting. These individuals perceive the area to have a rural, quiet, nonindustrial, and unhurried pace of life. Concerns were expressed that implementation of this project might change social and economic factors within Stillwater County and might affect the services offered within the community.

*Tailing Impoundment Stability and Integrity: Concerns about the suitability of construction material consisting largely of glacial debris, including boulders, cobbles, sand, gravel, and large amounts of fine clay for the new tailings impoundment were raised. In addition, questions about the applicability of paste technology to reduce volumes of tailings storage were raised.

*Aesthetics: Increased traffic, disruption of traffic by industrial activities, and refuse were expressed as concerns in many scoping comments.

*Transportation: Disruption of traffic flow on area roads as a result of pipeline construction was also raised as a concern.

*Reclamation: Proposed new activities will disturb an additional 251 acres. Many who commented doubt SMC's ability to reclaim disturbed areas to required levels of stability and utility.

*ISSUES NOT CONSIDERED FURTHER: There were two issues originally considered by DEQ and the Forest Service that were dismissed from further consideration. Both were dismissed because there were little or no differences in effects or only minimal, short-term effects. These issues include human health and safety related to the possible escape of chemical constituents in tailings impoundment waters and utilities related to the proposed extension of the existing powerline.

One of these issues is the possible escape of constituents from the tailing into ground and/or surface waters. Water quality monitoring has been conducted since 1980. The potential for water quality impacts of tailing escaping is demonstrated by the quality of the decant water sampled at surface monitoring site SMC–4, at the mill site, and by the geochemical characterization of the tailing. These tests indicate the ore body is non-acid generating. Toxicity Characteristic Leaching Procedure (TCLP) tests also show that constituents of the tailings have a low possibility of mobilizing metals. Many constituents are below the detection limits and all constituents of the tailings are at levels below the standards. Therefore, any mobilization that would possibly occur would be at even lower levels and impacts specific to an alternative cannot be documented.

The second issue was the potential for land-use changes that might result from extending the existing three-phase powerline from a point near the junction of Stillwater County roads 419 and 200 to the Hertzler site, a distance of one mile. The proposed powerline changes would create only minor land use changes and there would be no difference in effects between the alternatives considered. Therefore, the agencies concluded it was not reasonable to consider moving the existing powerline and causing increased impacts as a result.

C. Comment on the Draft EIS and Agency Response

The draft EIS was distributed and available for public review and comment from March 20, 1998, through May 19, 1998, and a public open house and hearing on the draft EIS was held April 28, 1998, in Absarokee, to answer questions and provide the public with the opportunity to submit written and verbal comments in person. Newspaper notices of the EIS availability and the open house and hearing were published in the Stillwater County News and the Billings Gazette.

Eleven individuals provided verbal comments at the public hearing and 45 letters were received. Appendix B of the final EIS contains a summary of comments received on the draft

EIS, and DEQ and CNF's responses to those comments. As a result, additional information was included in the final EIS and fourteen potential new agency mitigations are identified (EIS Section 2.4.5). Table 2–4 has been expanded to more fully show the differences between the environmental consequences of implementing alternatives A through D.

Comments received on the draft EIS primarily focused on issues previously identified during the scoping effort. Most comments focussed on the need for clarification or additional information pertaining to:

paste technology,
water quality and quality,
planning regulations or requirements,
social economics (property values), and
mitigations.

All written and oral comments were reviewed and considered during preparation of the final EIS. Comments that presented new data, questioned facts or analysis, or raised questions or issues bearing directly on the alternatives or environmental analysis received a response in the final EIS. Comments expressing personal opinions were considered but drew no response. The Notice of Availability for the final EIS was published in the Federal Register on October 9, 1998.

IV. ALTERNATIVES

A. Alternatives Eliminated from Detailed Consideration

A number of alternatives to the proposed action were evaluated, but eliminated from detailed consideration. An in-depth discussion of these alternatives appears in the final EIS in Section 2.5 along with the agencies' rationale for dismissal. These potential alternatives were identified as a result of past environmental analyses or public participation. In all, twenty-four alternatives were evaluated and dismissed from detailed consideration due to either technical, operational, economic or environmental considerations.

The 1985 EIS for the Stillwater Mine examined 18 alternatives for impoundment siting. Of these 18 sites, the 17 sites which had not been selected were revisited as a part of this EIS analysis. Table 2-2 of the final EIS summarizes this re-evaluation. Other pipeline alternatives were considered but dropped because the proposed plan amendment maximizes the use of existing disturbances. The four alternatives being considered show a range of impacts relative to most issues.

B. Development of Alternatives for Detailed Consideration

From the nine key issues, three were identified as driving issues in order to develop alternatives, thereby providing clear choices for the decision makers. Environmental consequences related to all issue areas were evaluated under each project alternative in order to

identify mitigation necessary to protect the quality of the human environment. The alternatives are described in detail in the final EIS, Chapter 2 (EIS Section 2.4).

Except for the no action alternative, each alternative considered in detail had to at least partially meet the purpose of and need for the project and incorporate actions to avoid, eliminate, reduce, minimize, or mitigate impacts that would result from implementing the proposed action. The no action alternative is required by law and regulation to be considered and the potential action alternatives are required to be practical or reasonable as well as technologically and economically feasible. Water quantity, tailings impoundment stability, and reclamation were the driving issues for developing EIS alternatives. The alternatives described below provide a clear choice based on these driving issues.

As the proposed action was analyzed, no significant impacts were identified that could be further reduced by other alternatives, changing locations of mine facilities, or mitigation measures relative to these issues. However, DEQ and the Forest Service did consider alternate locations for various facilities, modifying the size and storage capacity of the proposed and existing impoundments, and timing of construction, and looked at operational changes.

The following is a summary of the alternatives which are described in detail in Chapter 2 of the final EIS. Table S-1 on page S-33 of the final EIS summarizes the design differences between alternatives.

Alternative A - No Action

Under the no action alternative, SMC would have continued to mine until 2003, when facilities permitted for storage of waste and tailing would have been at their maximum permitted capacity. Under this alternative, SMC would have employed 655 workers, total tailing storage capacity would have been limited to 3.5 million tons covering 45 acres and waste rock storage capacity would have been 3.771 million tons covering 45 acres. Total disturbance would have covered 255 acres. Under this alternative, SMC would have had to submit another waste and tailing disposal plan if it wished to achieve its goal of continued mining (which would then be evaluated by the agencies) or, when SMC reached its permitted tailing and waste rock storage capacity, SMC would have had to implement the reclamation plan approved under Amendment 008.

Alternative B - SMC's Proposed Action

This plan amendment, as proposed by SMC, would construct an additional tailing impoundment at the Hertzler ranch with a supporting tailing slurry pipeline and water management facilities at the Hertzler and Stratton ranches, would expand the east-side waste rock dump, and would eliminate the production limit was evaluated as the proposed action. Total tailing capacity would increase to 18.5 million tons. Total disturbance would increase to 678 acres. The Hertzler impoundment would hold 15 million tons over 163 acres. Waste rock

storage amounts to nearly 21.271 million tons over 113 acres on the east-side site. Total employment would increase to no more than 700 employees.

Alternative C - Modified Centerline Expansion and Hertzler Tailing Impoundment

In this alternative, SMC would have expanded the existing impoundment using centerline construction methods, and reduced the size of the proposed Hertzler impoundment, for the short-term, by approximately 40 percent. Although waste rock and tailing storage would not have decreased, total disturbance would have decreased to 644 acres. The existing impoundment would be used until reaching its capacity. The construction at the Hertzler impoundment would occur 10 to 15 years into the 20- to 30-year horizon of this proposed action. However, under this plan, there would be greater risk to the Stillwater River in the event of an impoundment failure resulting from seismic activity in the fault zone at the mouth of the canyon. This alternative addressed two of the driving issue (Water Quality and Tailing Impoundment Stability) as described in Sections 4.1.1.3.1 and 4.6.1.3.1 of the final EIS.

Alternative D - Modified Centerline Expansion and East-Side Tailing Impoundment

In this alternative, SMC would have expanded the existing tailing impoundment and would have constructed and operated a new impoundment on the east side of the Stillwater River. Waste rock not utilized in construction of the east-side impoundment would have been placed in a small waste rock dump on the east side. A tailing slurry pipeline would have crossed the Stillwater River, utilizing the bridge which is currently in place in order to reach the east side. No new facilities would have been developed at Hertzler at this time under this alternative. This alternative would have reduced SMC's ability to store tails and thus the life of the tailing facilities is estimated to be 23 years, about 7 fewer years than Alternative B. Tailing storage capacity would have been reduced to 13.29 million tons and waste rock volumes would have been reduced to 15.885 million tons and disturbed acreage would have been reduced to 340 acres. A new permit application would be required for additional tailing storage in about 20 years, if SMC intends to continue operations. As long as it is in use, a slurry line would have increased the risk to the river in the event of a slurry line failure. This alternative addressed the Water Quality and Tailing Impoundment Stability driving issues, as discussed in Sections 4.6.1.4.2, 4.6.1.3.1, and 4.1.1.2.3 of the final EIS.

C. Environmentally Preferred Alternative

The identification of an environmentally preferred alternative is required by NEPA 40 CFR 1505.2(b) and MEPA (17.4. 617(9)). The environmentally preferred alternative is the alternative which has the least impact on the physical and biological environment. Economic, social, technical and agency mission factors are not considered in the identification of this alternative. The no action alternative is the environmentally preferred alternative, in that it results

in the least impact. However, it fails to meet the purpose of and need for its proposal and thus fails to allow development while providing appropriate levels of protection to environmental resources. Mining would cease when currently permitted waste rock dump and tailing storage space is exhausted, which is projected to be in the year 2003. There would be no new surface disturbance under this alternative.

SMC could, however, submit another plan for deposition of tailings and waste rock. If this happened the agencies would conduct an analysis of the plan under NEPA and MEPA.

V. CONDITIONS/MITIGATION MEASURES

The following narrative identifies permit conditions/mitigation measures that address specific public and agency concerns and driving issues, and the rationale for imposing these conditions. If any new plan submitted by SMC as a result of the conditions/mitigation measures discussed below results in a proposal which is outside the scope of our environmental analysis, then further NEPA/MEPA review would be necessary.

A. Amendment 010 Conditions/Mitigation Measures

As a result of issues identified above and public comments received throughout the analysis process, numerous mitigation measures were included in the final EIS to reduce anticipated effects. The following permit conditions/mitigation measures are hereby incorporated into our decision in order to mitigate and monitor project effects. These modifications are a part of our approvals and permits for SMC to construct and operate the Hertzler impoundment, supporting pipeline and water management facilities, and the east-side waste rock dump, and to eliminate production limits.

We have determined that the modifications described here are terms and conditions of the DEQ's permit for SMC's plan of operations amendment and the Plan of Operations approved by the Forest Service. Only specific modifications to SMC's proposal are described, followed by a short summary of our rationale for each condition/mitigation measure. In addition, ongoing conditions/mitigation measures attached to SMC's existing mine permits remain in full force and effect. Thus, SMC must continue to abide by the mitigation measures set forth in Operating Permit 00118 as amended (summarized in Appendix C of the final EIS). In addition to the conditions/mitigation measures described on the following pages, SMC would also continue to follow Best Management Practices of the CNF, as established in the Forest Service Handbook (FSH) 2509.22, the "Soil and Water Conservation Practices Handbook," May 1988.

The following permit conditions/mitigation measures, taken from the final EIS, have been resequenced in order to group related conditions/mitigation measures (see Table 1 below). All conditions attached to the hardrock mine plan appear first, followed by the condition related to the air quality permit. Thus, permit conditions/mitigation measures 1, 2, and 3, below, were

numbers 1, 10, and 6 in the EIS. Conditions 2 and 3 from the EIS have been merged as condition 4 to reduce redundancy. Conditions 5, and 6, below, were 4 and 5 in the final EIS. Conditions 7 and 8 remain unchanged. Conditions 9 and 10, below, have been moved forward; they were conditions 12 and 13 in the final EIS. Condition 11 remains unchanged. Condition 12 was condition 14 and condition 13 was condition 9 in the final EIS.

TABLE 1.-- Cross references to Condition Numbers Between ROD and EIS

Condition /Mitigation in ROD	Cross-reference to EIS	Implementing Permit/Approval
Engineering - #1	EIS # 1	MMRA & USFS
Engineering - # 2	EIS # 10	MMRA & USFS
Engineering - # 3	EIS # 6	MMRA & USFS
Hydrology - # 4	EIS # 2 and # 3	MMRA & USFS
Hydrology - # 5	EIS # 4	MMRA & USFS
Hydrology - # 6	EIS # 5	MMRA & USFS
Reclamation/Wildlife # 7	EIS # 7	MMRA & USFS
Reclamation /Wildlife # 8	EIS # 8	MMRA & USFS
Reclamation # 9	EIS # 12	MMRA & USFS
Reclamation # 10	EIS # 13	MMRA & USFS
Transportation # 11	EIS # 11	MMRA & USFS
Cultural Resources # 12	EIS # 14	MMRA & USFS
Air Quality # 13	EIS # 9	Air Quality Permit & USFS

Conditions/mitigation measures 1, 2 and 3 address engineering issues tied to impoundment construction and thus to water quality, tailing impoundment stability, and other issues. In response to water quality concerns, permit conditions 1, 2, 4, 5 and 6 were identified to further reduce the potential for impacts to surface and ground waters from the proposed tailings impoundment and supporting facilities. Permit condition 6 also addresses concerns raised about the need to minimize the volume of tails placed in tailings impoundments, and condition 2 addresses concerns about the potential for geologic instability under the impoundment. Conditions 7 and 8 are mitigations tied to concerns about minimizing forage competition between mule deer and bighorn sheep through manipulation of forage availability as well as forage quality. Conditions 9 and 10 are reclamation conditions which provide for optimal concurrent reclamation with minimal loss of soils to erosion. Although neither agency has the authority to require carpooling, it is encouraged under condition 11. Condition 12 addresses concerns about impacts to subsurface cultural resources in an area. Condition 13,

adopted into SMC's air quality permit ensures that dust is reasonably controlled during periods of inactivity. These conditions/mitigation measures are presented in detail below.

1. Under the Metal Mine Reclamation Act (MMRA) and USFS approval, SMC shall submit a Quality Assurance/Quality Control (QA/QC) Plan to ensure that the Hertzler impoundment foundation meets the minimum permeability requirement of $1x10^{-6}$ cm/sec. This plan shall be submitted for agency review and approval at least 60 days prior to commencing construction and shall include testing protocols. SMC shall also submit monthly construction QA/QC reports which include liner test results no later than 30 days after the end of the month. If testing shows that the material does not meet the minimum permeability requirement of $1x10^{-6}$ cm/sec, SMC shall remove and replace the in-place material with material which meets these construction specifications.

> Rationale: It has been shown that the integrity of the liner is a key in ensuring protection of water quality and that testing is a routine way of ensuring quality control during liner construction. Therefore, testing of the clay liner during construction would provide an acceptable level of assurance that ground waters below the impoundment would be protected from contamination. All impact assumptions portrayed in the final EIS are based on this permeability condition. Other protections to water quality proposed by SMC in its plan of operations were described as a part of its proposed plan in the final EIS.

2. Under the MMRA and USFS approval, SMC shall conduct additional stability modeling and analysis on the Colorado Shale Unit for deep foundation failures. This analysis shall then be incorporated into SMC's final design work. In addition, SMC shall utilize a professional engineering geologist and/or appropriate specialist to observe the excavation of the Hertzler ranch impoundment foundation and borrow areas to determine if any geomorphological features were exposed that would indicate ancient mass failure. A report on the geomorphological features shall be submitted within 30 days of the completion of impoundment excavations. If ancient mass failure features are observed, then SMC shall develop a plan and schedule for a detailed drilling program and analysis prior to completion of the impoundment structure. The drilling and analysis plan is subject to agency review and approval prior to implementation. If the analysis indicates it is necessary, SMC shall develop changes to the design of the impoundment and submit the revised design to the agencies for review and approval.

> Rationale: Based on geologic data gathered for the application and the NEPA/MEPA analysis, the agencies assumed there would be little or no potential for structural problems. However, this mitigation would confirm that the shale bedrock and glacial till, exposed in quantity by SMC's excavations, had not been affected by past mass movement and that the glacial till would provide a suitable foundation for the impoundment. Designing the impoundment based on actual subsurface conditions improves the integrity of the impoundment. Thus, the possibility of undetected

potential for tailing impoundment failure as a result of ground movement is further minimized to an acceptable level.

3. Under the MMRA and USFS approval, SMC shall submit an engineering report to the agencies re-evaluating the applicability of paste technology, identifying economic and technologic feasibility for use in tailing disposal at the Stillwater mine after 5 years of operations of the pilot paste plant. The report shall recommend whether or not paste technology can be reasonably and feasibly applied to the SMC operation to reduce the volume of tails stored on the surface for the long-term, or reduce other impacts. The report shall be submitted to the DEQ and the CNF no more than 6 years after paste pilot plant operations have been initiated. Within 1 year of submittal, the agencies will review the report and determine whether or not SMC should apply paste technology.

Rationale: Numerous concerns were raised which focused on the need to reduce the total quantity of tails being stored by increasing the volume of materials replaced underground. SMC is currently returning a significant amount of their tails underground to backfill underground stopes. Thus, the volume of tails placed on the surface is minimal. The technology for further reduction is not presently available. However, paste technology is rapidly evolving. A re-evaluation of its use would ensure that opportunities to reduce impacts are not overlooked and that opportunities to maximize the efficient utilization of existing structures and minimize potential future disturbances are identified.

4. Under the MMRA and USFS approval, SMC shall submit, with its next annual report, a biological monitoring plan for agency review and approval.

If groundwater quality data at downgradient monitoring wells at the Hertzler site show increases in nitrate+nitrite above 2 mg/L, or show the presence of constituents indicative of tailings water seepage, then SMC shall conduct biological monitoring of periphyton and macroinvertebrates in the Stillwater River above and below the site in accordance with the approved monitoring plan. SMC shall also initiate monitoring of nearby downgradient residential wells, if the owner wishes, that could potentially be affected by facility discharges. SMC shall submit a plan for agency review and approval within 60 days of its identification of elevated constituents to take appropriate operational measures to reduce nitrate concentrations in groundwater below 2 mg/L, or to take appropriate remedial measures to ensure it remains in compliance with its permits.

If groundwater quality at downgradient monitoring wells at the Stratton site show increases in nitrate+nitrite above 2 mg/L, then SMC shall initiate monitoring of nearby downgradient residential wells, if the owner wishes, that could potentially be affected by facility discharges. SMC shall submit a plan for agency review and approval within 60 days of its identification of elevated constituents to take appropriate operational measures to reduce nitrate concentrations

in groundwater below 2 mg/L, or to take appropriate remedial measures to ensure it remains in compliance with its permits.

Rationale: Monitoring would determine whether the predictions related to the quantity and quality of tailing impoundment seepage and LAD water seepage were valid. Biological monitoring would identify unanticipated chronic impacts of changes in water quality if they were to occur. The requirement for elimination of impacts through operational or remedial measures ensures that water resources are adequately protected.

5. Under the MMRA and USFS approval, SMC shall purchase, and have in place, a backup generator adequately sized to ensure the pipeline leak detection sensor continues to operate effectively during power failures or partial power outages.

Rationale: The availability and use of backup generators during power outages would ensure no breach during a power outage was undetected. This cannot be done without a continuous power supply. Thus, contingency plans to protect adjacent and significant resources could be implemented immediately in the event of a pipeline breach.

6. Under the MMRA and USFS approval, SMC shall submit the tailing slurry pipeline wear data it collects, as specified in the approved plan of operation, with its annual report. After 2 years, the agencies will, based on their review of pipeline monitoring data, determine appropriate future pipeline testing needs in order to ensure the integrity of the tailing slurry and water pipeline system.

Rationale: To provide additional agency oversight, the submittal of this data would ensure that the agencies are aware of any unexpected post-construction problems resulting in abnormal wear and tear on the pipelines, thereby decreasing the possibility of a breach due to construction flaws to a negligible level.

7. Under the MMRA and USFS approval, SMC shall work with the Stillwater Valley Bighorn Sheep Management Committee to explore the use of prescribed fire in order to improve the quality and quantity of forage in the project area, thereby minimizing forage competition between bighorn sheep and mule deer.

Rationale: Fire modifies plant communities, encouraging diversity and releasing nutrients bound in the litter layer. Use of fire would reduce the potential for big horn sheep and mule deer competition for a limited forage base in the surrounding area by potentially increasing the quality and quantity of grass and forb species. Thus the Montana Department of Fish, Wildlife, & Parks' long-term plans for sheep recovery in the area would be enhanced.

8. Under the MMRA and USFS approval, SMC shall, within 2 years of permit amendment approval, to identify grass species, if they exist, to potentially replace creeping meadow foxtail

with a more palatable native species, as effective in the uptake of nitrates, in the reclamation seed mix for the LADs. SMC shall then modify its seed mix for the next planting season.

Rationale: Although no significant impacts to wildlife are expected, adjusting the seed mix would increase the palatability and nutrition of the forage available to mule deer in the project area. Over time, this could help reduce the potential for forage competition between mule deer and the native bighorn sheep herd.

9. Under the MMRA and the USFS approval, SMC shall extend the first lift of the approved Hertzler tailing impoundment to the full footprint so that the outer slopes can be reclaimed once and not be redisturbed during construction of the second lift. SMC shall be required to submit a replacement page for the Mine Waste Management Plan showing the revised stage I, II and III embankment in the next annual report.

Rationale: This would eliminate the need to reclaim that portion of the embankment a second time, when stage II of the impoundment is built. Thus, the short-term loss of productivity is minimized.

10. Under the MMRA and the USFS approval, SMC shall limit revegetated slopes to 150 feet in length or less before being intercepted by a rocky zone. This rocky zone or armor shall be placed to produce a natural appearing slope and reduce potential soil erosion.

Rationale: The soils used on reclaimed slopes could be erosive. The agencies analyzed erosion in the 2000 TPD EIS and concluded a 150-foot slope length was needed to reduce erosion to acceptable limits and to ensure that mass movement of the soil does not take place. Due to the fact that the Hertzler impoundment will be constructed and reclaimed utilizing native glacial soils which are rocky in nature and resist erosion better than a typical "A" horizon soil texture, the requirement for the 150-foot slopes will be re-addressed at final reclamation and may be modified to approve longer slope lengths based on concentrations of course fragments in the final reclamation soils. This plan modification will consider the success of previous project reclamation on localized sites having comparable slope lengths ranging in length from 100 to 200 feet using native glacial soils.

11. The agencies will encourage SMC to develop incentives for employee car pooling within 6 months of permit issuance.

Rationale: Carpooling was originally required as a mitigation in order to minimize the potential for loss of bald eagles feeding on winter season road kills. The last 13 years of experience have shown that eagle mortality due to vehicle collisions has not occurred. Additionally, SMC is currently required to remove all road kills from roadways adjacent to the Stillwater River and this mitigation will continue. Thus, the agencies have no basis for mandating SMC continue carpooling. However, as

production and employment increase, employee incentives for car pooling would generally reduce traffic and thus traffic-related issues such as road maintenance and congestion.

12. SMC shall have a professional archeologist present during construction of the pipeline and embankments for the first lift of the Hertzler impoundment in areas of known or suspected cultural resources or when nearing adjacent identified and potential cultural sites. The archeologist shall be responsible for identifying any cultural material that might be exposed during construction. In the event a site is exposed, SMC shall cease operations until the agencies have been contacted and an appropriate evaluation and mitigation plan is developed and implemented.

Rationale: It is difficult to identify subsurface sites prior to construction. A number of sites close to the right-of-way have been identified and have the potential to include subsurface components. This mitigation would ensure any significant subsurface site which may exist is adequately protected.

13. Under the Montana Air Quality Act and the USFS approval, SMC shall abate dust problems whenever one or both of the impoundments is not in use or is inactive.

Rationale: Predominant windy conditions in the Stillwater valley increase the potential for fugitive dust release when either impoundment is inactive. SMC's air permit issued for this revision requires that a sprinkler system, or comparable controls, be installed if dust is a problem. These measures have been demonstrated effective at other sites.

B. Previous Applicable Conditions

DEQ and Forest Service decisions pertaining to previous environmental analyses (1985 through 1996) required SMC to implement a variety of mitigation measures. Many of these measures are ongoing or annual requirements. Consequently, SMC must continue to implement them, regardless of our decision on this analysis. A summary of the mitigation measures required in previous decisions is included as Appendix C of the EIS.

VI. IMPLEMENTATION

Our decisions are effective upon our signing of this Record of Decision and the approval of the Plans of Operations by the Forest Service. Surface disturbing activities on private lands may be implemented by SMC following submittal of the reclamation performance bond to DEQ for the amount established by DEQ (summarized in Section B below) *and* following issuance of the MMRA operating permit amendment.

For lands administered by the Forest Service, if no appeals (36 CFR 215) are received, implementation of this decision on Federal lands may occur on, but not before, five business

days from the close of the appeal filing period. If an appeal is received, implementation may not occur for 15 days following the date of appeal disposition.

A. Other Rights and Permits

Approval of the modified Plan of Operations for SMC by the Forest Service does not constitute a determination regarding the validity or ownership of any unpatented mining claim involved in the mining operations. Approval of the modified Plan of Operations by DEQ and the Forest Service does not convey or create any real property rights or use rights. Property rights on federal lands are conveyed only through ownership of patented and/or unpatented mining claims under the authority of the 1872 General Mining Law as amended. Rights to private property are controlled through ownership or agreements with landowners.

SMC has a Montana Pollutant Discharge Elimination System (MPDES) permit # MT-0024716 for discharge to the Stillwater River through outfalls to groundwater and surface water issued on July 6, 1998. SMC's Stormwater Pollution Prevention Plan was approved under the provisions of the General Discharge Permit for Storm Water Associated with Mining and with Oil and Gas Activities permit # MTR 300017, issued October 7, 1997. No changes in these permits result from this decision.

SMC holds air quality permit #2459-08 issued on October 26, 1998, and must comply with its requirements which includes condition 13 identified in Section V above. No further modifications to this permit have resulted from this decision.

The agencies recognize that a Stillwater River Corridor Zoning petition has been submitted to and accepted by the Stillwater County Commission. As discussed in Section 2.7.2 of the final EIS, no decision on this zoning petition has been rendered. However, zoning laws preclude the use of zoning to prevent the complete use, development, or recovery of hardrock minerals and forest or agricultural resources by the owner thereof (76-2-209, MCA)

SMC is responsible for obtaining any property rights, easements, mineral rights, or water rights necessary to implement the selected alternative. SMC is additionally responsible for obtaining any other local, State, or Federal permits, licenses, or reviews that might be necessary to implement our decision.

During implementation of our decision, SMC may propose modifications to the mining and reclamation plans, and associated mitigation measures or conditions. Such changes may be appropriate in order to allow the use of alternate future mitigation methods, or to respond to an improved understanding of site conditions gained through operational experience.

Any proposed change to the operating procedures, schedule, reclamation design, or mitigation measures will be reviewed by the agencies and accepted if the change would provide resource protection equal to or greater than the original requirement, and would not result in significant

impacts not identified in the final EIS. Proposed changes that would not achieve the same level of resource protection, or would result in previously undisclosed significant impacts, would require supplemental analysis under NEPA and MEPA prior to determining their acceptability.

B. Reclamation Bond

A reclamation bond has been posted for the existing permit and this amendment and will be maintained in an amount that will enable the agencies to implement the reclamation and other plans as stipulated above and in prior amendments should SMC be unable or unwilling to do so. The bond covers costs associated with the operation, maintenance, and monitoring, and closure and reclamation. The reclamation bond has been posted in full and may be released to reflect stages of mine development and performance of concurrent reclamation, but it must always remain at an amount adequate to pay for the reclamation of existing disturbances. The public will be notified of the results of the 5-year bond review and any proposed bond releases and provided the opportunity to comment. The entire reclamation cost estimate will be reviewed and adjusted by the agencies at least every 5 years to account for changes in reclamation costs and inflation. The reclamation bond does not represent the limits of SMC's liability should actual reclamation performance not meet the requirements in the reclamation plan or comply with environmental laws.

In complying with the full extent of the Montana Metal Mine Reclamation Act (MMRA) under 82-4-338, MCA, and Forest Service requirements under 36 CFR 228.13, a reclamation bond has been calculated for Stillwater Mining Company's (SMC) amendment. The bond amount for the existing facilities was comprehensively reviewed in May 1995, and is currently $3,203,400. Based upon the information submitted, the additional bond for the proposed Amendment 010 disturbances has been calculated to be $4,383,000, establishing a total bond amount of $7,586,400.

This bond calculation is based on SMC's existing Section 4.0 Reclamation Plan, dated December 1993, on SMC's Mine Waste Management Plan Amendment to Permit #00118, Appendix I, dated April 1996, and as subsequently modified by this Record of Decision.

This Record of Decision selects the proposed action as modified by numerous conditions/ mitigation measures which are attached to the operating permit. This bond calculation has been prepared for the selected alternative and the attached conditions/mitigation measures.

The bond calculation has been divided into specific items that include: (1) reclamation of the Hertzler impoundment and associated facilities; (2) reclamation of the east-side waste rock storage site; and (3) reclamation of the pipeline corridor. A summary of bonding costs is presented below. Detailed calculations are on file at the DEQ's and the Beartooth Ranger District's offices.

Reclamation Summary Amendment No.010	
Current Permit Acres:	1,341
New Permit Acres:	2,453
Current Bonded Acres:	255
New Bonded Acres:	526

(1) **Existing Bond** - This includes the bond amount necessary to reclaim the disturbances previously permitted under Operating Permit 00118, pursuant to the conditions/ mitigation measures summarized in Appendix C of the final EIS.

Bond Amount: *$3,203,400*

(2) **Reclamation of the Hertzler Impoundment** - This includes dewatering the impoundment by pumping the water and applying it to the LAD areas and/or tailing beaches. As a contingency, wick drains may be installed to accelerate final consolidation. Overburden will be borrowed, hauled, and placed to account for long-term settlement. The tailings surface will be reclaimed by placing 2 feet of topsoil over the fill surface. The remaining unreclaimed embankment slopes will be reclaimed with 1 foot of topsoil. Borrow areas, soil stockpiles and process ponds are regraded, and covered with soil. Finally, vegetation is to be established by planting assorted forbs, grasses and shrubs.

Bond Amount: *$2,964,000*

(3) **Reclamation of the East-Side Waste Rock Storage Site** - This consists of grading the final waste rock lift from angle-of-repose to 2H:1V and 3H:1V, and ripping and grading the top of the storage site to a final grade of a gently undulating surface. A minimum of 12 inches of topsoil will be placed on the top of the dump. Topsoil will also be placed along selected areas of the slopes, leaving neutral waste rock uncovered in some areas to create a mosaic of vegetation intermixed with scree slopes. Vegetation will then be established by planting assorted grasses, forbs, and shrubs. Miscellaneous disturbances such as the 5000 East portal patio, construction buffer zones, borrow areas and topsoil stockpiles will also be ripped, resoiled, and revegetated. Diversion ditches lined with riprap will be constructed to route storm water runoff around the storage site.

Bond Amount: *$288,000*

(4) **Reclamation of the Pipeline Corridor** - This includes removal of additional facilities constructed for the Hertzler impoundment such as the tailings thickener plant and the reclaim system. The buried pipelines will be left in place. The five inspection vaults

will be filled with concrete, covered with soil, and seeded to establish vegetation.

Bond Amount: *$21,000*

Other costs associated with the reclamation of SMC's amendment include administration (15%), engineering and redesign (2%), mobilization (1%) and cost escalation factors (3% for five years).

Total Amendment 010 Reclamation Cost:	*$4,383,000*
Total Bond for Operating Permit 00118:	*$7,586,400*

SMC submitted the additional bond October 29, 1998. Bond release may be requested by SMC as its completed activities meet the reclamation standards outlined in the MMRA and Forest Service regulations. When bond release is requested, the agencies will evaluate the request and solicit public comment as required by 82-4-338, MCA, prior to making a decision.

C. Selected Alternative Compliance with Legal and Policy Mandates

This section explains how the selected alternative satisfies the agencies' statutory, regulatory, and policy mandates. Forest Service regulations at 36 CFR 228.8 require that the Forest Service ensure that "all operations shall be conducted so as, where feasible, to minimize adverse environmental impacts on National Forest surface resources, including air quality, water quality, solid waste, scenic values, fisheries and wildlife habitat, and roads" during the life of the minerals operation.

The selected alternative fulfills this requirement by virtue of agency-prescribed mitigation measures, described in final EIS in Section 2.4.5, attached to the submitted plan of operations amendment. As evaluated in Chapter 4 of the final EIS these resource values have been protected.

The selected alternative includes measures to reduce, minimize or avoid impacts to water quality and quantity, wildlife and fisheries habitats, air quality, aesthetic resources, transportation, and reclamation issues identified by the public and the agencies. It addresses these issues by requiring reasonable mitigation measures for anticipated adverse impacts and by requiring reclamation of lands disturbed by proposed mining activities.

In conclusion, the expanded mining and reclamation plans for the Stillwater mine in the selected alternative will not result in unnecessary or undue degradation of Federal lands, either on or off site. The selected alternative therefore satisfies the requirements of the National Forest Management Act, the Organic Administration Act, the 1872 General Mining Act and the 1970 Mining and Mineral Policy Act.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act was passed as a joint resolution of Congress. The resolution states that it shall be the policy of the United States to protect and preserve for the American Indian the inherent right of freedom to believe, express and exercise traditional religions, to use sacred objects and to worship through ceremonies and ritual. The Forest Service complies with this act by consulting with and considering the views of Native Americans when a proposed land use might conflict with traditional Native American religious beliefs or practices. The act does not require that land uses which conflict with Native American religious beliefs or practices be denied.

There have been no conflicts with Native American religious beliefs or practices identified through the public participation process.

Clean Water Act (Wetlands)

Under Section 404 of the Federal Clean Water Act, SMC must obtain a permit to place waste rock in drainages that are considered "waters of the US." Under Section 401 of the Act, MDEQ must either certify that the action will comply with state law or waive such certification.

SMC's proposed plan would minimally affect wetlands for the short-term. An Army Corps of Engineers (COE) decision was issued October 28, 1997. Under this decision, DEQ, CNF, the US COE, and the Environmental Protection Agency would be notified if impacts to wetlands or riparian areas not otherwise predicted in this EIS are likely to occur. SMC would be granted Nationwide Permit Number 12 for pipeline construction and Nationwide Permit Number 26 for the LAD site and the east-side waste rock dump by the COE, conditional upon receipt of a 401 certification from DEQ. Based on the analysis contained in Chapter 4 of the final EIS, page 4-14, the DEQ will waive certification concurrent with this decision.

Endangered Species Act

In developing the EIS for the Hertzler impoundment, the agencies completed a Biological Assessment pursuant to the Endangered Species Act and in consultation with the US Fish and Wildlife Service. These documents, reproduced in the final EIS as Appendix F, demonstrate that the project would have "no effect" on peregrine falcons, bald eagles, black-footed ferrets, or grizzly bears providing SMC continues to comply with the mitigation measures established in the permits and approvals issued subsequent to the 1985 EIS and 1989 EA. The US Fish and Wildlife Service concurred with the findings of the BA as documented in a letter from the Service contained in the Project File for this analysis.

Executive Order 12898 on Environmental Justice

On February 11, 1994, President Clinton signed Executive Order 12898 that requires federal agencies to address issues of environmental justice when implementing their respective programs.

Public scoping and public participation throughout the EIS process involving the geographic area and local population impacted by the proposed action did not reveal any issues related to environmental justice. The agencies have considered all public input from persons or groups regardless of age, race, income status, or other social/economic characteristics. The Stillwater mine amendment was evaluated using the appropriate environmental justice criteria, as documented in Section 4.14. No disproportionately high or adverse human health or environmental effects were identified for minority or low-income populations.

Land Use Plan Conformance

The Federal lands included in this analysis are managed by the CNF and are open to mineral entry under the 1872 General Mining Law. Specifically, the area encompassed by the amendment to SMC's plan of operations lies within Management Area E as described in the Custer National Forest Land and Resource Management Plan (Forest Plan). The selected alternative is consistent with Forest Plan goals, objectives, and management area direction. The Forest Plan direction related to this area is discussed in Section 1.4.2.1 of the final EIS. Approval of this amendment to SMC's plan of operations by Forest Service on lands open to mineral entry is not discretionary (i.e., the Forest Service cannot deny such a plan; see 36 CFR 228(A).

Montana Air Quality Act

Emissions from mining activity have been within ambient air quality standards. Predicted emission levels will not exceed air quality standards. SMC's air quality permit number 2459-07 is superseded by permit number 2459-08 issued October 26, 1998, as a part of this decision. Under that permit SMC must ensure dust is not a problem during periods of inactivity at either impoundment, consistent with condition 13 described in Section V above.

Montana Hard Rock Impact Act

The Stillwater mine is compliance with the Hard Rock Impact Act. SMC's Hard Rock Impact Plan, approved in 1985 and updated in 1988 and 1998 is in effect. The mitigation of economic impacts has been negotiated between SMC and Stillwater County. The activities proposed under this expansion fall within the limits set in the approved plan. However, procedures exist and would be used by Stillwater County if circumstances dictate the need for a change in the approved plan.

Montana Metal Mine Reclamation Act

The purpose of MMRA is to provide that the usefulness, productivity, and scenic value of mined land receive "the greatest reasonable degree of protection and reclamation to beneficial use." It also recognizes that the degree of reclamation is controlled by its practicability. MMRA requires the establishment, on a continuing basis, of vegetative cover, soil stability, water conditions and safety conditions appropriate to the proposed postmining land use. SMC may not depart from the approved reclamation plan without first obtaining written approval of the proposed change from the agencies.

At SMC, the postmining land use will be wildlife habitat and livestock grazing. Reclamation will support this land use to a reasonable degree as required by MMRA requirements described above, as summarized below from the EIS, and from SMC's reclamation plan.

Reclamation of portions of the mine complex will be performed concurrently with other mining activities as much as possible. Condition/mitigation number 9, above, identifies a modification in the proposed plan that will be required to further facilitate the return of disturbed acreage to a productive postmining condition. Reclamation of each portion will be finished within 2 years after abandonment. The tailing impoundments will be considered abandoned when the tailing is finally consolidated, 8 to 10 years after the last tailing has been deposited. Portions of the waste rock dumps have been regraded, soiled, and revegetated. This reclamation work will continue as various parts of the waste rock dumps and impoundment embankments reach capacity and are decommissioned.

Stagnant water will not accumulate in the subsurface mine area. The mine workings are being backfilled with tails as active areas are completed. Percolation and process ponds will be reclaimed at the end of mine life to ensure they do not hold stagnant water.

The waste rock dumps will be regraded to a slope angle and resurfaced with vegetation and rock mosaic that mimics the surrounding natural slopes. The waste rock dumps and tailing impoundments will be soiled with borrow material and topsoil and revegetated. The surface material will be non-noxious, nonflammable, and noncombustible solids. The reclaimed vegetation will be a mixture of grasses and forbs with some shrubs and trees. This community will have a function and general appearance similar to the surrounding natural vegetation. There will be no sanitary landfill on the mine site. There will be no open pit left as a result of mining. Noxious weeds will be controlled until the agencies decide that revegetation has been successful, and the bond is released.

SMC has submitted the required certifications under 82-4-335(9). MMRA requires that the reclamation plan provide sufficient measures to prevent the pollution of air and water. SMC's compliance with the Montana Water Quality Act and the Montana Air Quality Act is described herein and is documented in Chapter 4 of the final EIS.

Montana Noxious Weed Act and County Weed Control Act

The company will continue to be responsible for noxious weed control within the permit area. This will involve an annual check with a designated Forest Service or county representative to identify occurrences and determine appropriate control measures. Stillwater Mining Company has committed to limiting establishment and spread of noxious weeds resulting from soil disturbances and increased traffic in the area. SMC has an approved Noxious Weed Control Plan pursuant to Title 7-22-2101 *et seq*, MCA.

Montana Private Property Assessment Act

Mitigation measures described in the conditions above do not have taking or damaging implications. The EIS contains a Regulatory Restrictions analysis at the end of Chapter IV.

Montana Water Quality Act

The operating plan, reclamation plan, and water management plan will effectively control the discharge of potential pollutants as described under the MMRA evaluation below. In addition to backfilling the underground workings, SMC will effectively limit infiltration of surface-water runoff into the backfilled workings. Similarly, SMC's operational water control plan will limit the potential for water to seep through the backfilled workings and dissolve and transport metals or other potential water pollutants.

Infiltration into the waste rock dumps and tailing impoundments will be minimized by grading and revegetating their surfaces. Groundwater contaminated by seepage from the waste rock dumps and from the two tailing impoundments will be detected in monitoring wells. Seepage to groundwater is not expected to violate the provisions of the Water Quality as described in the final EIS.

The DEQ completed a significance determination with regard to groundwater quality degradation, in SMC's Montana Pollutant Discharge Elimination System (MPDES) permit renewal. An MPDES permit is required for all discharges to surface water or groundwater. SMC received a renewal of its MPDES permit #MT-0024716 on July 6, 1998, for discharge of excess adit water into the Stillwater River. SMC also has an approved Stormwater Pollution Prevention Plan. A 3A permit will be issued for a short-term exemption of standards during construction, approximately 60 days before construction starts. This permit approval would be based on SMC's commitments to continue implementation of Best Management Practices.

All discharges authorized under SMC's MPDES permit would be below levels that would affect human health or create chronic problems for freshwater life. SMC is required to comply with water quality standards established by the Board of Environmental Review in WQB-7. The EIS analysis, Sections 4.1.1.2 and 4.1.1.2.3, indicate that SMC's plan achieves

this level of compliance. SMC's existing water permits remain in full force and effect under this amendment.

National Historic Preservation Act

The Forest Service has completed the process for considering the effect of the undertaking on historic properties as required by Section 106 of the National Historic Preservation Act. Affected Indian tribes have been consulted and their concerns have been satisfactorily addressed. The Stillwater mine amendment will not impact traditional religious beliefs or practices as documented by the letter of concurrence contained in the project file from the Montana State Historic Preservation Officer and consultation with potentially affected tribes. All adverse impacts have been avoided through protective measures and/or project design.

Stillwater Mining Company previously completed the cultural resource surveys and inventories for the permitted area during the 1985 and 1989 analyses and provided a 1997 survey of the proposed Hertzler plan area, as required, to comply with state and federal statutes protecting cultural resources. Concurrence was received from the State Historic Preservation Office October 26, 1998. If previously undiscovered cultural resources are encountered, SMC must notify the District Ranger, the DEQ, and the State Historic Preservation Office and not proceed until the agencies give approval. See condition/mitigation measure 12 described in Section V, above.

National Mineral Policy Act Conformance

The Mining and Minerals Policy Act of 1970, the National Forest Management Act, and the Organic Administration Act and the Natural Materials and Minerals Policy, Research and Development Act of 1980 direct that the public lands be managed in a manner which recognizes the nation's need for domestic sources of mineral production. Under the Mining Law of 1872 claimants have a statutory right to develop their mineral deposits consistent with applicable environmental laws.

Our selected alternative meets the intent of the Act because it provides for continued domestic mineral production of platinum and palladium from the Stillwater mine. Platinum is a strategic mineral. Although the United States is the world's largest consumer of platinum, US production is currently 5 percent of the world's supply. South Africa is the world's leading supplier of platinum, followed by the former U.S.S.R. The agencies believe the selected alternative approving this project will help the U.S. meet the demands of the U.S. market. Approximately 10 percent of the world's production would come from the U.S. Cumulatively, with the East Boulder project, the U.S. could potentially produce 15 to 20 percent of the world's supply of platinum.

Religious Freedom Restoration Act

The Religious Freedom Restoration Act of 1993 requires that before a government action may substantially burden a person's exercise of religion the government must demonstrate its action is (1) in furtherance of a compelling government interest; and (2) is the least restrictive means of furthering that interest. In public scoping and public participation throughout the EIS process this issue has not been raised. The Stillwater mine amendment will not burden the exercise of religion for either Native Americans or others.

D. Consistency with the Applicable Planning Documents

The goals and objectives of the Custer Forest Plan are applicable to this project as discussed in Chapter I (Section 1.4.2.1) of the final EIS. The proposed plan as modified by the above permit conditions, will remain consistent with the Forest Plan management goals, objectives, and management area direction. No other state or federal planning efforts are applicable to the proposed mine area.

E. Cumulative Effects

Chapter IV of the EIS provides a cumulative effects analysis. There are no related future actions under concurrent consideration, and no reasonably foreseeable future actions, that, when considered in conjunction with past and present actions, are likely to result in additional significant impacts. Should future actions be proposed which have or may have cumulative effects, additional analysis pursuant to the applicable requirements of NEPA and MEPA would be conducted by the agencies.

The cumulative effects of this project in conjunction with existing Forest Service activities and possible future activities were analyzed in the final EIS on pages 4-15, 4-25, 4-29, 4-33, 4-43, 4-48, 4-66, 4-70, 4-71, 4-74, 4-77, 4-83, and 4-89. The extent of this analysis was determined by the pattern of use for each resource. Thus, for example, wildlife concerns covered a different area than water concerns. During the life of SMC's project the majority of the cumulative activities will take place in the Stillwater River valley and involve traffic. This analysis remains valid and is summarized below.

Possible cumulative effects from concurrent activities include increased traffic as a result of increased recreation in the valley and increased stress on the bighorn sheep as a result of increased recreational traffic.

Although additional mineral reserves would possibly be developed at the end of mine life (when both tailing dams are full), the location and nature of such development is not reasonably foreseeable at this time and thus has not been evaluated in detail in the cumulative effect in this analysis. To the extent possible, such impacts have been addressed in the Integrated Resource Analysis completed by the CNF and Gallatin National Forest (April 1991).

If economic conditions and SMC company stability are sufficient near the end of the currently projected mine life, SMC may wish to submit a proposal to construct a new tailing impoundment in order to extend mine life. Possible cumulative effects of future development of platinum and palladium reserves may include:

. increased total disturbance because construction of a new impoundment may overlap reclamation of the existing impoundment. Thus, there may also be the potential for a cumulative effect on wildlife.

. increased total traffic on some road segments because there may be potential haul traffic or construction traffic from the existing millsite.

In addition, mineral reserves, such as chromium could possibly be developed, however, the location and nature of such development is not reasonably foreseeable, and thus also has not been evaluated in detail as a cumulative effect in this analysis. Presently, no market has been found for the historic chromite stockpile at Columbus. If additional mineral reserves were to be developed before the closure of the SMC mine, cumulative effects would likely occur to wildlife, traffic, community services and land use. Cumulative impacts may also occur to water resources.

Any future projects with the potential to generate cumulative impacts will be evaluated when an application with sufficient detail is received by the agencies. Such analyses will be conducted pursuant to NEPA and MEPA, as appropriate, to determine the full extent of the cumulative effects prior to decision making. Those analyses will be available for public participation prior to decision making.

Mining development would constitute an irretrievable or irreplaceable commitment of the platinum and palladium resources that would be mined under this permit. However, this approval does not commit resources not yet proposed for mining. Most of the resources in the Stillwater Complex would remain uncommitted. Any future development proposal made by SMC would be evaluated for compliance with state and federal statutes applicable at the time of application and would be evaluated under the Montana and National Environmental Policy Acts, as appropriate.

In summary, cumulative effects have been minimized to the extent practicable. There are no additional significant effects occurring from the cumulative effect of other activities with the proposed mine project.

F. Monitoring and Evaluation

Ongoing monitoring and evaluation programs exist for water, tailings, waste rock, the pipeline, spills, aquatic life, bighorn sheep and other resource values found in the project area as disclosed in Appendix C and the plan of operations. Monitoring programs are also identified in Chapter II of the EIS page 2-33 and in Stillwater's application. Monitoring re-

ports will be open to public review at the agencies offices. These reports may be reviewed during normal business hours and may be copied for a small administrative fee.

Stillwater Valley Bighorn Sheep Report

SMC is responsible for providing a report once every two years to the Stillwater Valley Bighorn Sheep Committee related to the status of the native herd which uses the project area. This report details herd mortality, sex and age composition of the herd, and makes recommendations for future actions intended to reduce or eliminate mine effects to the sheep herd.

Annual Water Resources Monitoring Report

This report is submitted yearly and includes the results of all water resources monitoring specified in the operating plan for the entire year. This report also includes a summary of past annual monitoring results and trend analysis.

Annual Operating and Reclamation Status Report

This is the annual report required by MMRA. The annual report describes overall mining and reclamation status. This report will include SMC's tracking of the status and progress in complying with the agency-imposed stipulations.

VI. RIGHT TO ADMINISTRATIVE REVIEW (APPEAL PROCESSES)

Our decision documented in this Record of Decision (ROD) may be appealed under certain conditions described below.

A. Appeals of the USFS Decisions

Proponent Appeal Process (36 CFR 251, Subpart C)

The project proponent (SMC) may appeal this decision pursuant to 36 CFR 251, Subpart C. Appeals filed under 36 CFR 251 Subpart C must be filed within 45 days of the written notice of the decision sent to the proponent. Filing procedures must conform with direction provided at 36 CFR 251.87 and 251.88 in order for the Notice of Appeal to be considered. The content of the Notice of Appeal must conform to direction provided at 36 CFR 251.90.

Public Appeal Process (36 CFR 215)

This Record of Decision is also subject to appeal pursuant to 36 CFR Part 215.7. A written Notice of Appeal must be submitted within 45 days of this publication of the Notice of Decision (36 CFR 215.9) in the Billings Gazette. The Notice of Appeal must be sent to

Dale Bosworth, Regional Forester, USDA Forest Service, Northern Region, P.O. Box 7669, Missoula, Montana 59807. Appeals must meet the content requirements of 36 CFR 215.14. Detailed records of the environmental analysis are available for public review at the Beartooth Ranger District, HC 49, Box 3420, Red Lodge, MT 59068.

As previously stated above in this Record of Decision, if no appeals are received, implementation of this decision may occur on, but not before five (5) business days from the close of the appeal filing period. If an appeal is received, implementation may not occur for fifteen (15) days following the date of appeal disposition.

B. Appeals of the DEQ Decisions

Under Montana state law, this record is subject to court appeal by the applicant and other parties who have standing for 90 days after issuance of the operating permit amendment. Notice of permit issuance will be published in the Stillwater County News and the Billings Gazette.

VII. APPROVALS

This Record of Decision is effective for each agency upon our signing.

Mark A Simonich — 11/12/98

MARK A. SIMONICH — Date
Director, Montana Department of Environmental Quality

Nancy T. Curriden — 11/13/98

NANCY T. CURRIDEN — Date
Forest Supervisor, Custer National Forest

Contact Persons

For additional information on the mining, operation, and closure plan, this Record of Decision, or the Environmental Impact Statement please contact either Pat Pierson, Interdisciplinary Team Leader US Forest Service, Beartooth Ranger District, HC 49, Box 3420 Red Lodge, MT, 59068 or DEQ, EMB Bureau Chief, PO Box 200901 Helena, MT 59620-0901